

<b>Project Note</b>		<b>DynCorp</b>
<b>To:</b> Sauget Area 2	<b>Date:</b> 07/16/2001	<b>Page:</b> 1 of 1
<b>From:</b> Julia Barr, DynCorp Associate Environmental Scientist		
<b>Subject:</b> Adjusted CRQL\CRDLs		
<p>CRQLs and CRDLs were adjusted for sample specific conditions including percent moisture, sample size, and dilution factors. The CRQLs and CRDLs, as well as the equations used to calculate them were found in the US EPA Contract Laboratory Program Statement of Work for Organics Analysis (1999, OLM04.2) and the US EPA Contract Laboratory Program Statement of Work for Inorganics Analysis (1999, ILM04.0). These documents are publically available and can be accessed using the internet at:</p> <p><a href="http://www.epa.gov/superfund/programs/clp/methods.htm">http://www.epa.gov/superfund/programs/clp/methods.htm</a></p> <p>The following equations were used in the package:</p> <p><b>Organic Service Statement of Work (OLM04.2)</b></p> <p><u>Volatiles</u></p> <p>Water</p> <p>EQ. 8      Adjusted CRQL = Contract CRQL x <math>\frac{V_x}{V_o}</math> x Df</p> <p>Low Level Soil/Sediment</p> <p>EQ. 9      Adjusted CRQL = Contract CRQL x <math>\frac{(W_x)}{(W_s) (D)}</math></p> <p>Medium Level Soil/Sediment</p> <p>EQ. 10      Adjusted CRQL = Contract CRQL x <math>\frac{(W_x) (V_t) (V_y) (1000) (Df)}{(W_s) (V_c) (V_a) (D)}</math></p> <p><u>Semivolatiles</u></p> <p>Water</p> <p>EQ. 7      Adjusted CRQL = Contract CRQL x <math>\frac{(V_x) (V_t) (V_y) (Df)}{(V_o) (V_c) (V_i)}</math></p>		

### Semivolatiles (cont.)

#### Soil/Sediment

EQ. 8

$$\text{Adjusted CRQL} = \text{Contract CRQL} \times \frac{(W_x) (V_t) (V_y) (Df)}{(W_s) (V_c) (V_i) (D)}$$

### Pesticides/Aroclors

#### Water

EQ. 16

$$\text{Adjusted CRQL} = \text{Contract CRQL} \times \frac{(V_x) (V_t) (V_y) (Df)}{(V_o) (V_c) (V_i)}$$

#### Soil/Sediment

EQ. 17

$$\text{Adjusted CRQL} = \text{Contract CRQL} \times \frac{(W_x) (V_t) (V_y) (Df)}{(W_s) (V_c) (V_i) (D)}$$

### **Inorganics**

$$\frac{\text{CRDL (mg/kg)} \times \text{sample weight (g)} \times \text{DF}}{\text{Dry weight digestate (g)}} = \text{Adjusted CRDL}$$

or

$$\frac{\text{CRDL } (\mu\text{g/L}) \times 200\text{mL (final volume)} \times 1000\mu\text{g/mg} \times \text{DF}}{1000\text{mL/L} \times 1\text{g (sample weight)} \times 1000\text{g/kg} \times (\% \text{ solids}/100)} = \text{Adjusted CRDL}$$

eg.

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$$\text{Adj. CRQL} = 330\mu\text{g/kg} \times \frac{(30\text{g}) (500\mu\text{L}) (2\mu\text{L}) (1)}{(30.5\text{g}) (500\mu\text{L}) (2\mu\text{L}) (.66)} = 491.8\mu\text{g/kg}$$



# Superfund



## Contract Laboratory Program



### Statements of Work

CLP analytical services are defined in Statements of Work (SOWs). The following SOWs provide the technical and contractual framework for commercial environmental testing laboratories to apply EPA CLP analytical methods for the preparation/isolation, detection, and quantitative measurement of organic target compounds and inorganic target analytes in water and soil/sediment environmental samples.

Each SOW includes a summary of general requirements; reporting and deliverable requirements; target compound or target analyte list and contract required quantitation/detection limits; specific analytical methods; quality assurance/quality control requirements; chain-of-custody and sample documentation requirements; a glossary of terms; and specifications for reporting data in computer-readable format, when applicable.

- Organic Service Statement of Work
- Inorganic Service Statement of Work
- Low Concentration Organic Service Statement of Work

## Organic Service Statement of Work

### USEPA Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration, OLM04.2

This document defines the analytical methods accepted by the CLP for the isolation, detection, and quantitative measurement of 48 volatile, 65 semivolatile, and 28 pesticide/Aroclor target compounds in water and soil/sediment environmental samples. (532 pages)

Organic Service Statement of Work in PDF Format:



- [Exhibits A through D](#) - Summary of Requirements, Reporting and Deliverables Requirements; Reporting and Deliverables; Target Analyte List and Contract Required Quantitation Limits; and Analytical Methods (PDF 818KB, 377 pages)
- [Exhibits E through H](#) - Quality Assurance/Quality Control Procedures and Requirements; Chain-of-Custody, Document Control, and Written Standard Operating Procedures; Glossary of Terms; and Agency Standard Implementation (PDF 271KB, 155 pages)

#### OLM04.2a Contract Modifications

The CLP Organic Multi-Media Statement of Work, OLM04.2 was released in the Fall of 1999. Since then, through constant review of the SOW and from advancements in our understandings of preservation techniques for low concentration level soil samples, AOC feels some changes to the SOW are now warranted. These changes are reflected in the following document in the form of technical corrections, technical clarification, and method modification. The modifications are contractual in nature, and are requirements for current CLP laboratories.

- Download the [OLM04.2A Contract Modifications](#) [PDF 27KB, 4 pages]



For more detailed information regarding this service, consult the [fact sheet](#).

## Inorganic Service Statement of Work

The CLP Inorganic Analytical Service (ILM04.1) was awarded January 2000. The ILM04.1 SOW consists of ILM04.0 as modified by four amendments. The following PDF file contains Attachments 1 and 3 from the ILM04.1 IFB. Attachment 1 contains a summary of changes from ILM04.0 to ILM04.1. Attachment 3 contains an excerpt from ILM04.1 Exhibit B, which summarizes Reporting and Deliverable Requirements.

- [ILM04.1 IFB Attachments 1 and 3](#) (76KB, 21 pages)



Inorganic Service Statement of Work ILM04.0 in PDF format



- [Exhibits A through C](#) - Summary of Requirements, Reporting and Deliverables Requirements, Inorganic Target Analyte List (314KB, 82 pages)
- [Exhibit D](#) - Analytical Methods (229KB, 85 pages)
- [Exhibits E through H](#) - Quality Assurance/Quality Control Requirements; Chain-of-Custody, Document Control, and Written Standard Operating Procedures; Glossary of Terms; Data Dictionary and Format for Data Deliverables in Computer-Readable Format (253KB, 109 pages)

For more detailed information regarding this service, consult the [fact sheet](#).

The following ILM04.1 related documents are also available:

Inorganic SDG Cover Sheet	<a href="#">PDF</a> (84KB, 1 page) 	<a href="#">Wordperfect</a> (81KB, 1 page)
SOW Interpretation Form	<a href="#">PDF</a> (20KB, 1 page) 	<a href="#">Wordperfect</a> (79KB, 1 page)

## Low Concentration Organic Service Statement of Work

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### USEPA Contract Laboratory Program Statement of Work for Organics Analysis, Low Concentration Water, OLC02.1

This document defines the analytical methods accepted by the CLP for the isolation, detection, and quantitative measurement of 41 volatile, 59 semivolatile, and 28 pesticide/Aroclor target compounds in low concentration groundwater and drinking water type samples. (400 pages)

Low Concentration Organic Service Statement of Work in PDF Format:



- [Exhibits A through C](#) - (also has bookmarks for the other exhibits) Summary of Requirements; Reporting and Deliverables Requirements; Target Compound List and Contract Required Quantitation Limits (291KB, 127 pages)
- [Exhibit D Volatiles](#) - Analytical Method for Volatiles (165KB, 66 pages)
- [Exhibit D Semivolatiles](#) - Analytical Method for Semivolatiles (157KB, 62 pages)
- [Exhibit D Pesticides/Aroclors](#) - Analytical Method for Pesticides/Aroclors (186KB, 74 pages)
- [Exhibits E through G](#) - Quality Assurance/Quality Control Procedures and Requirements; Chain-of-Custody, Document Control, and Written Standard Operating Procedures; Glossary of Terms (175KB, 71 pages)

For more information regarding this service, consult the [fact sheet](#).

\*If you experience problems viewing or downloading documents provided on this Web site please contact [Willie Wong](#).

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URL: <http://www.epa.gov/superfund/programs/clp/methods.htm>

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